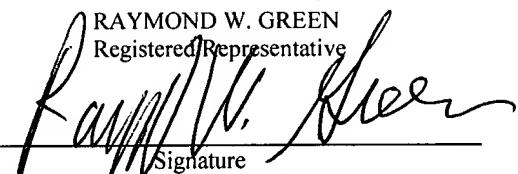




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Registered Representative  
  
Signature

Date of Signature: May 21, 2007

**PATENT**

BHG&L Case 8627/405

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant:	Kieran P. J. Murphy	:	Cook Case PA-5281
Serial No.:	09/594,685	:	
Filed:	June 16, 2000	:	Group Art Unit: 3732
For:	APPARATUS FOR STRENGTHENING VERTEBRAL BODIES	:	Examiner: Michael J. Araj
		:	

**REPLY BRIEF ON APPEAL TO THE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

**Mail Stop Appeal Brief-Patents**  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

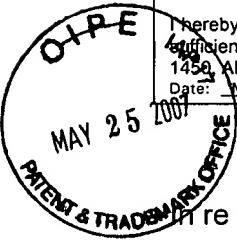
Appellants' Substitute Main Brief was filed August 22, 2005. This Reply Brief responds to the Examiner's Answer mailed March 26, 2007.

**EXAMINER'S SUMMARY OF CLAIMED SUBJECT MATTER**

The Examiner states (Examiner's Answer, Section (5), page 2) that the summary of claimed subject matter contained in Appellant's Main Brief (Section (6), pages 3-7) is correct.

## CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8

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 Date: May 21, 2007 Name: Raymond W. Green Signature: *Raymond W. Green*



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of: Kieran P. J. Murphy

Appln. No.: 09/594,685

Filed: June 16, 2000

For: APPARATUS FOR STRENGTHENING  
VERTEBRAL BODIES

Attorney Docket No: 8627/405 (PA-5281)

BRINKS  
HOFER  
GILSON  
& LIONE

Examiner: Michael J. Araj

Art Unit: 3732

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Alexandria, VA 22313-1450

## TRANSMITTAL

Sir:

## Attached is/are:

REPLY BRIEF ON APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES (7 pages) with attached APPENDIX E (15 pages).  
 Return Receipt Postcard

## Fee calculation:

No additional fee is required.  
 Small Entity.  
 An extension fee in an amount of \$\_\_\_\_\_ for a \_\_\_\_\_-month extension of time under 37 C.F.R. § 1.136(a).  
 A petition or processing fee in an amount of \$\_\_\_\_\_ under 37 C.F.R. § 1.17(\_\_\_\_).  
 An additional filing fee has been calculated as shown below:

	Claims Remaining After Amendment		Highest No. Previously Paid For	Present Extra	Small Entity		Not a Small Entity		
					Rate	Add'l Fee	or	Rate	Add'l Fee
Total		Minus			x \$25=			x \$50=	
Indep.		Minus			x 100=			x \$200=	
First Presentation of Multiple Dep. Claim					+\$180=			+\$360=	
					Total	\$		Total	\$

## Fee payment:

A check in the amount of \$\_\_\_\_\_ is enclosed.  
 Please charge Deposit Account No. 23-1925 in the amount of \$\_\_\_\_\_. A copy of this Transmittal is enclosed for this purpose.  
 Payment by credit card in the amount of \$\_\_\_\_\_ (Form PTO-2038 is attached).  
 The Director is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 associated with this paper (including any extension fee required to ensure that this paper is timely filed), or to credit any overpayment, to Deposit Account No. 23-1925.

Respectfully submitted,

Raymond W. Green (Reg. No. 24,587)

May 21, 2007  
Date

BRINKS HOFER GILSON &amp; LIONE

NBC Tower – Suite 3600, 455 N. Cityfront Plaza Drive, Chicago, IL 60611-5599

BRINKS  
HOFER  
GILSON  
& LIONE

### **EXAMINER'S GROUNDS OF REJECTION**

The "Grounds of Rejection" specified by the Examiner (Examiner's Answer, Section (9), pages 3-7) are essentially identical to the "Detailed Action" in the Final Rejection mailed November 15, 2004, pages 2-5.

### **EXAMINER'S RESPONSE TO ARGUMENT**

#### **(a) Claims 22-23**

The first "Response to Argument" specified by the Examiner (Examiner's Answer, Section (10)(a), page 7) states that the Amendments filed February 5, 2006, were denied entry and affirmed by the directors of Technology Center 3700.

To expand on that statement, the Examiner stated at page 10 of the Final Rejection that "Claims 22 and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, set forth in [the Final Rejection] and to include all of the limitations of the base claim and any intervening claims." Those rejections stated that it was unclear if the recited components were present in both trays collectively, or individually; but that for purpose of examination, it was assumed that each tray included all components.

The Amendment filed February 5, 2006, would have overcome the 35 USC 112 rejections and included all of the limitations of the base claim and any intervening claims, but the Examiner then stated (Advisory Action of March 10, 2005) that the proposed Amendment would not be entered because it would require new search, and because it raised the question of new matter. A timely Request for Reconsideration of the denial of entry of the Amendment was filed on April 5, 2005, but no response to the Request has been made by the Examiner. A timely Petition under 37 CFR 1.181 was filed May 9, 2005, requesting review of the denial of entry of the Amendment. The petition was "dismissed" on November 21, 2006, by a decision on the merits, stating that inquiry should be directed to Allan N. Shoap, Special Programs Examiner. It was signed by Karen M. Young for Frederick R. Schmidt, Director for Technology Center 3700. There is no indication that Mr. Schmidt ever saw or approved the decision.

No one has adequately explained why Claims 22 and 23 were considered to be allowable if rewritten; but when rewritten in independent form and to make explicit the assumption made by the Examiner as to the meaning of the claims, to overcome the 35 USC 112 rejections, they required further search.

**(b) Claims 17-19**

The second “Response to Argument” specified by the Examiner (Examiner’s Answer, Section (10)(b), pages 7-10) is essentially identical to the first portion of the “Response to Argument” in the Final Rejection mailed November 15, 2004, pages 5-8.

**(c) Claims 1-16, 20 and 21**

The third “Response to Argument” specified by the Examiner (Examiner’s Answer, Section (10)(c), pages 11-12) is a minor revision, adding no new substance, to the latter portion of the “Response to Argument” in the Final Rejection mailed November 15, 2004, pages 8-9.

It is thus apparent that the Examiner has no answer to Appellants’ Main Brief, and he can only repeat what was said before. In particular, the Examiner has no response or disagreement with the following statements:

(1) “No prior art reference or combination of references applied by the Examiner teaches or suggests the combinations of components claimed in claims 1-16.” (Main Brief at page 4).

(2) “Lazarus, the reference applied to allegedly anticipate Claims 17-19, does not teach ‘vertebroplasty injection components’ as recited in claim 17. Furthermore, no prior art reference or combination of references applied by the Examiner teaches or suggests the two-tray configuration claimed in claims 17-19, arranged so that the first tray of components can be used to perform a first vertebroplasty injection, and then the second tray of components can either (a) be used to perform a second vertebroplasty injection, or (b) remain sterile for use in another vertebral body.” (Main Brief at page 4).

(3) “No prior art reference or combination of references applied by the Examiner teaches or suggests the combinations of components claimed in claim 21.” (Main Brief at page 5).

(4) “No prior art reference or combination of references applied by the Examiner teaches or suggests the combinations of components claimed in claim 22; and in fact the Examiner

indicated in the Final Rejection mailed November 15, 2004, that Claims 22 and 23 were considered indefinite and rejected under 35 USC 112, second paragraph, in that it was unclear whether the recited components were present in the first and second tray in combination, or if each of the first and second trays contained the recited components; but that for examination purposes, the claims had been construed to recite that each of the first and second trays contained the recited components (page 2); and that Claims 22 and 23 would be allowable if rewritten to overcome the rejection under 35 USC 112, second paragraph, and to include all of the limitations of the base claim and any intervening claims (page 10.)" (Main Brief at page 5).

(5) "The vertebroplasty / surgical components recited in Claim 23 are a subset of the vertebroplasty / surgical components recited in Claim 22. (¶) No prior art reference or combination of references applied by the Examiner teaches or suggests the combinations of components claimed in claim 22; and in fact the Examiner indicated in the Final Rejection mailed November 15, 2004, that Claims 22 and 23 were considered indefinite and rejected under 35 USC 112, second paragraph, in that it was unclear whether the recited components were present in the first and second tray in combination, or if each of the first and second trays contained the recited components; but that for examination purposes, the claims had been construed to recite that each of the first and second trays contained the recited components (page 2); and that Claims 22 and 23 would be allowable if rewritten to overcome the rejection under 35 USC 112, second paragraph, and to include all of the limitations of the base claim and any intervening claims (page 10.)" (Main Brief at page 6).

(6) "[T]he amendment changing recitations of "vertebroplasty components" to "vertebroplasty and surgical components" was proposed to remove a point of contention, although it was totally unnecessary, and did not change the scope of the claims, because vertebroplasty is a type of surgical procedure. Hence, vertebroplasty components *are* surgical components – specialized surgical components." (Main Brief at pages 6-7).

The Examiner not only did not deny these six statements, as noted above on page 1, he acknowledged that they were correct (Examiner's Answer, Section (5), page 2 – "The summary of claimed subject matter contained in [Appellant's Main] brief is correct.").

The Examiner also has no response or disagreement with the following statements:

(7) “[T]he Examiner’s interpretation [of Claims 22 and 23, which were construed to recite that each of the first and second trays contained the recited components] is the only reasonable one, and … the Claims are not indefinite. … Whether or not the Amendment filed February 10, 2005,<sup>1</sup> is entered, the rejection should be reversed.” (Main Brief at page 7).

(8) “The Examiner does not take proper account of a point made in the Appeal Brief filed January 12, 2004, and reiterated in the last two Amendments, namely that the “Lazarus apparatus does not have ‘vertebroplasty injection components’, recited in claim 17, lines 3 and 5, in either tray.” ” (Main Brief at page 8).

(9) “The Examiner ignores the explanation in the Declaration why the Lazarus components are not “vertebroplasty injection components”, dismissing it as “opinion” of a party who has an interest in the outcome of the case, and lacking in “facts”. The Examiner ignores the facts recited in the Declaration in Paragraphs 7-12, *e.g.*, that vertebroplasty injection components are a different size than the Lazarus needles.” (Main Brief at page 8). The “Declaration” referred to is the Declaration Under 37 CFR 1.132 of Dr. Kieran Murphy, explaining that the Lazarus apparatus does not have “vertebroplasty injection components”, recited in claim 17, lines 3 and 5, in either tray, as that term is understood by persons of ordinary skill in the art. (See Declaration at pages 3-5, paragraphs 7-12.) A copy of the Declaration is Appendix C of Appellant’s Main Brief.

(10) “[A]s explained in the Declaration, the recitation “vertebroplasty injection components” is more than an intended use; it designates for example needles sufficiently robust for injection of bone cement. The Examiner says “facts” are events, acts or occurrences which have actually taken place, and indeed, that is what *historical* facts are. However, it is also a fact, as pointed out in the Declaration, that vertebroplasty injection needles need to be sufficiently robust for injection of bone cement. So the Examiner ignores the facts stated in the Declaration,

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<sup>1</sup> The “Amendment filed February 10, 2005” is the same as the “Amendment filed February 5, 2005” referred to above. It was mailed February 5, 2005, and received in the Mailroom on February 10, 2005.

and *based on no facts at all*, elevates his own opinion over that of the expert. This is error.” (Main Brief at pages 8-9).<sup>2</sup>

(11) “The Declaration … explains why the *combinations* claimed in Claims 1-16, 20 and 21 would not have been obvious to a person of ordinary skill in the art, either from Vagley alone or from Vagley in view of the eleven secondary references applied in another rejection. (See Declaration at page 5, paragraphs 13-14.)” (Main Brief at page 9).

With respect to Appellant’s statement, “The Examiner has used Applicant’s claims as a shopping list to find patents that teach each *element* (or something he considers to be *like* each element) in the combination, but has not cited or applied a reference that teaches or suggests the *combination* itself.” (Main Brief at page 9), the Examiner says “if the examiner would have found the ‘*combination*’ of elements itself, he would have done a 35 U.S.C. 102, anticipation rejection.” (Examiner’s Answer, page 11). But the Examiner has not denied that he has not cited or applied a reference that even *suggests* the *combination* itself.

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<sup>2</sup> With respect to the propriety of the Examiner or even the Board of Patent Appeals and Interferences elevating their own opinion over that of expert evidence of record, attention is directed to the recent precedential decision of the Court of Appeals for the Federal Circuit, *Brand v. Miller*, No. 2006-1419 (Fed. Cir. May 14, 2007). A copy of the opinion, not yet appearing in the Federal Reporter of the United States Patent Quarterly, is attached as Appendix E (so lettered to avoid confusion with prior appendices) to this Reply Brief. *Brand v. Miller* was the decision on appeal of *Miller v. Brand*, Interference 105,215. In that case, Miller alleged that Brand had derived the invention from Miller’s drawings, MX 2001 and MX2002. “The Board described as ‘unconvincing’ the declaration of witness Bobby Deckard, who stated that ‘there is no way one could deduce from [MX2001] how to build a machine [in accordance with the invention], because [MX2001] failed to explain why an artisan [would have known how to use and modify the devices shown in MX2002]’”. Slip. Op. at 6-7. “The Board nonetheless held that Miller had established derivation based on the combination of MX2001 and 2002.” Slip. Op. at 6. The Court held “that, in the context of a contested case, it is impermissible for the Board to base its factual findings on its expertise, rather than on the evidence in the record, although the Board’s expertise appropriately plays a role in interpreting record evidence.” Slip. Op. at 10-11. The Court went on to say “We do not – and need not – decide here the extent to which the Board in ex parte proceedings is so limited.” Slip. Op. at 11. The Examiner has not, however, explained why the Examiner should base his factual findings (that “it is clear that each tray [of Lazarus] include[s] a[n] injection component and they can perform a function in spinal surgery if one so desire[s].”) on his expertise, rather than on the evidence in the record (the explanation in the Declaration why the Lazarus components are not “vertebroplasty injection components”).

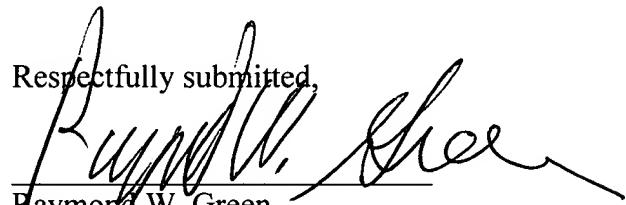
## CONCLUSION

Claims 17-19, 22 and 23 recite “vertebroplasty injection components”, which are not present in the Lazarus patent. Applicant has filed the Declaration of Dr. Kieran Murphy, showing that the Lazarus patent does not teach “vertebroplasty injection components” as that term is understood by persons of ordinary skill in the art. The Examiner has not justified elevating his opinion over that of Dr. Murphy.

Claims 1-16, 20 and 21 recite combinations, which neither Vagley nor any of the secondary references teach or suggest.

Claims 22 and 23 were indicated to be allowable if rewritten to overcome formal rejections and eliminate reference to rejected claims. Claims 22 and 23 were proposed to be amended to overcome formal rejections and eliminate reference to rejected claims, but have not been allowed.

All rejections applied by the Examiner should therefore be REVERSED.

Respectfully submitted,  
  
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Registration No. 24,587

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312-321-4222

May 21, 2007



2006-1419  
(Interference No. 105,215)

ROBERT D. BRAND, CAPITAL MACHINE CO., INC.,  
and INDIANA FORGE, LLC,

Appellants,

v.

THOMAS A. MILLER, DARREL C. PINKSTON,  
and MILLER VENEERS, INC.,

Appellees.

Meredith Martin Addy, Brinks Hofer Gilson & Lione, of Chicago, Illinois, argued for appellants. With him on the brief was Raymond W. Green.

Clifford W. Browning, Krieg Devault LLP, of Indianapolis, Indiana, argued for appellees.

Appealed from: United States Patent and Trademark Office, Board of Patent Appeals and Interferences

## United States Court of Appeals for the Federal Circuit



2006-1419  
(Interference No. 105,215)

ROBERT D. BRAND, CAPITAL MACHINE CO., INC.,  
and INDIANA FORGE, LLC,

Appellants,

v.

THOMAS A. MILLER, DARREL C. PINKSTON,  
and MILLER VENEERS, INC.,

Appellees.

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DECIDED: May 14, 2007

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Before MICHEL, Chief Judge, ARCHER, Senior Judge, and DYK, Circuit Judge.

DYK, Circuit Judge.

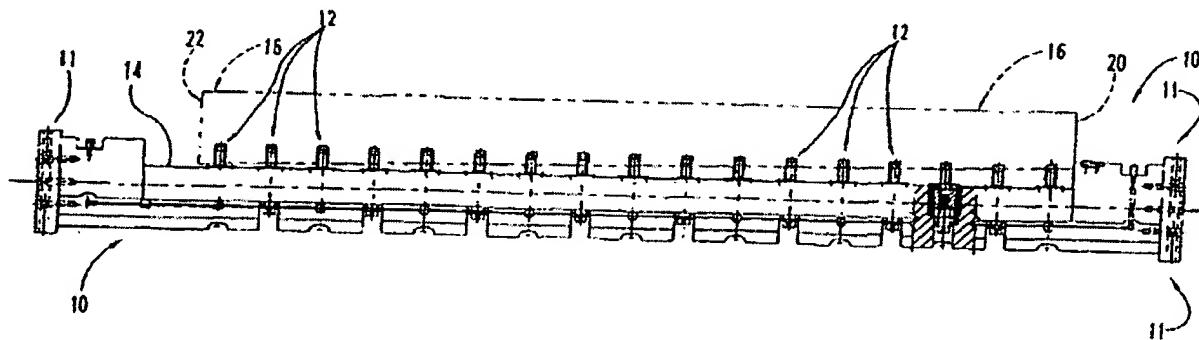
Appellants Robert D. Brand, Capital Machine Co., Inc. and Indiana Forge, LLC (“Brand”) appeal from the judgment of the Board of Patent Appeals and Interferences (“Board”) of the U.S. Patent and Trademark Office (“PTO”) in Interference No. 105,215, entering judgment for appellees Thomas A. Miller, Darrel C. Pinkston, and Miller Veneers, Inc. (“Miller”) on the issue of priority. The Board concluded that Brand derived the subject matter of the single count from Miller. We hold that the Board impermissibly relied on its own expertise in determining the question of derivation and that the Board’s

conclusion is not supported by substantial record evidence. We therefore reverse and remand for further proceedings consistent with this opinion.

#### BACKGROUND

The invention here relates to methods of cutting veneer from logs of wood. Typically logs are cut lengthwise into a pair of "flitches," which are then mounted onto the rotating "staylog" of a veneer cutting machine. The flitch is held in place on the staylog by clamping "dogs." The veneer-cutting knife then cuts off slices of veneer from the flitch as it rotates on the staylog.

Because logs are typically thicker at their base than at their end, traditionally the butt-ends of the resulting tapered flitches were cut off in order to make them more uniform in cross-section from end to end. The ends that had been cut off were then discarded. The invention at issue allows a tapered flitch to be mounted on a staylog such that the flitch's veneer-producing face (the uppermost surface region of 16 in the diagram below from U.S. Patent No. 5,865,232 ("232 patent")) is parallel to the veneer-cutting knife. This results in more efficient use of the flitches.



Traditional dogs could not be used to mount a tapered flitch (16) onto a staylog (10) because traditional dogs did not allow the length of the dog extending from the staylog to vary based on the flitch's taper. The inventors here used different types of dogs to

solve that problem.

During the relevant period Robert Brand was the Chief Engineer for Capital Machine Co. ("Capital"), which makes machines for cutting veneer. He is now retired from Capital and works as an unpaid consultant with Miller Veneers. Brand is the named inventor of U.S. Patent Application No. 09/377,120 ('120 application). Thomas Miller was Production Manager of Miller Veneers, a customer of Capital. Miller is the named inventor of the '232 patent. The two companies had a close working relationship, and Thomas Miller on occasion communicated new design concepts to Capital.

On April 28, 2004, the Board declared an interference with a single count to determine whether Miller or Brand should have priority. The count, which is claim 1 of Miller's '232 patent and the identical claim 38 of Brand's '120 application. The count reads:

A method for cutting veneer sheets from a tapered flitch, comprising the steps of

providing a staylog for a veneer slicing machine having a veneer slicing knife;

attaching a flitch having a tapered veneer producing face to the staylog with the tapered veneer producing face affixed in a stable, parallel relationship with the veneer slicing knife; and

cutting veneer sheets with the veneer slicing knife from the tapered veneer producing face of the flitch.

While the same claim appears in both the '232 patent and the '120 application, the inventors used different methods to solve the problem of attaching a tapered flitch to a staylog. Miller's '232 patent employs radially-expandable round "collett dogs" (depicted below at left) to support the flitch while Brand's '120 application uses multi-

headed tall pin dogs (depicted below at right) for the same purpose.



In the interference proceeding, Brand was the Senior Party, having filed his application on May 31, 1995.<sup>1</sup> Miller, the Junior Party, made two arguments for priority. Miller argued it was entitled to priority as the party first to conceive and first to reduce to practice, and also argued it was entitled to priority because Brand derived the invention from Miller. The Board first addressed Miller's argument that it was first to conceive and first to reduce to practice, and determined the respective conception and reduction to practice dates of Brand and Miller. The Board held that Miller's conception date was no earlier than October 27, 1994, and denied Miller's attempt to amend its priority statement to claim an earlier date. The Board held that Miller failed to prove an actual reduction to practice prior to Brand's May 31, 1995, benefit date. The Board concluded that, since Junior Party Miller failed to prove it reduced to practice first, it failed to establish that it was entitled to an award of priority as the party first to conceive and first to reduce to practice. Miller has not raised this issue on appeal.

The Board then turned to Miller's other argument, that Miller was entitled to priority because Brand derived the invention from Miller. Miller's case for derivation was

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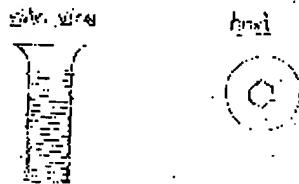
<sup>1</sup> The Board then held that Brand failed to prove a conception date earlier than its May 31, 1995, constructive reduction to practice date. The Board reasoned that, while several Brand drawings did demonstrate conception of the subject matter of the count, there was no corroborated evidence of the completion dates of these drawings because witness William Koss, the Executive Vice President of Capital, did not distinguish between commencement and completion dates. In light of our holding that Brand was entitled to priority, we need not describe or address Brand's alternate argument that he was entitled to an earlier date for conception and reduction to practice.

based primarily on two drawings that Miller allegedly showed Brand before Brand's own conception. The first, Miller Exhibit 2001 ("MX2001"), depicts an end view of a tapered flitch:



The Board found that Miller showed Brand and Koss (the Executive Vice President of Capital), the drawing in MX2001 at a meeting held sometime between October 7, 1994 and October 12, 1994, well before Brand's conception date of May 31, 1995. The drawing in MX2001 does not depict any dogs or any holes in the flitch for receiving dogs.

The second drawing that Miller alleged supported its case for derivation was Miller Exhibit 2002 ("MX2002"), which the Board found was contained in a fax from Miller to Brand on October 7, 1994, and which depicts a type of screw called a "bugle headed screw dog":



The Board addressed whether Miller had proven that Brand derived the invention from Miller based on the information in Miller Exhibits ["MX"] 2001 and 2002, either separately or taken together. While Brand was aware that the bugle-headed dogs

depicted in MX2002 were intended as substitutes for standard dogs, the Board rejected as uncorroborated the testimony of Miller that he explicitly told Brand how to practice the invention of the count by using the bugle-headed dogs to support a tapered flitch. The Board nonetheless held that Miller had established derivation based on the combination of MX2001 and 2002. The Board reasoned that “one skilled in the art . . . would have recognized [the] suitability [of Miller’s bugle-headed screw dogs MX2002] for securely supporting a tapered flitch in the position depicted in [MX2001].” J.A. at 62. The Board did not cite any testimony or record evidence to support its conclusion. The Board further held that “[t]he ability of the bugle-headed screw dogs to tightly clamp the flitch would have been readily apparent.” Id.

The Board also held, in the alternative, that the information in MX2001, taken alone, was sufficient to teach one of ordinary skill in the art how to practice the method of the count. Again without citing record evidence, the Board concluded that the drawing in MX2001 disclosed the invention. Although MX2001 does not depict the relationship between a flitch and the veneer-cutting knife, the Board concluded that “[a]lthough not discussed in the exhibit, it is apparent that the flitch is supported [in the required position].” While MX2001 does not show the size and shape of supporting dogs, the Board concluded that “it is nevertheless clear that the position of the flitch is due to the fact that the dogging holes have different depths.” Id. at 60-61.

Brand filed a request for rehearing, arguing principally that the Board failed to take into account declarations by witnesses that favored Brand’s position, inter alia, on the derivation issue. The Board denied the request. In particular, on the question of derivation, the Board described as “unconvincing” the declaration of witness Bobby

Deckard, who stated that “there is no way one could deduce from [MX2001] how to build a machine or attach a tapered flitch to the machine,” because it failed to explain why an artisan “would not have known to use screw dogs which are longer than the screw dog depicted in MX2002.” J.A. at 77-78. Brand timely filed this appeal. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

## DISCUSSION

1

Under § 554 of the Administrative Procedure Act (“APA”), if an agency adjudication is “required by statute to be determined on the record after opportunity for an agency hearing,” the adjudication becomes a formal proceeding, subject to the requirements of §§ 556 and 557 of the APA. 5 U.S.C. § 554. Sections 554, 556 and 557 require hearings to be held, impose detailed conditions for the creation of a written record and forbid ex parte communications. 5 U.S.C. §§ 554, 556-557.

As the Supreme Court has held, adjudicatory proceedings before the Board are governed by the requirements of the APA. Dickinson v. Zurko, 527 U.S. 150, 154 (1999). In In re Gartside, 203 F.3d 1305 (Fed. Cir. 2000), an appeal from an interference proceeding, we held that PTO proceedings are not formal adjudications governed by §§ 556 and 557 of the APA. Id. at 1313. We reasoned that APA § 554 excludes from formal adjudications under §§ 556 and 557 those proceedings that are subject to subsequent trial de novo, and that the patent statute allows applicants to obtain in district court such trials after PTO proceedings. Id.; see 35 U.S.C. §§ 145-146.

Although PTO proceedings are not formal adjudications governed by §§ 556 and 557 of the APA, the Supreme Court has held that our review of those proceedings is

governed by another section of the APA, § 706. Dickinson, 527 U.S. at 152. The Supreme Court in Dickinson did not decide which of the several standards of review in APA § 706 applies to PTO proceedings. We first considered that question in Gartside, an appeal from a Board interference proceeding. We noted that APA § 706 provides that “[t]he reviewing court shall . . . hold unlawful and set aside agency action, findings, and conclusions found to be . . . unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute.” Gartside, 203 F.3d at 1311; 5 U.S.C. § 706 (emphasis added). We then noted that 35 U.S.C. § 144 directs us to review “on the record” the decisions of the Board. Id., quoting 35 U.S.C. § 144 (“The United States Court of Appeals for the Federal Circuit shall review the decision from which an appeal is taken on the record before the Patent and Trademark Office.”) (emphasis added). We concluded that findings of fact by the Board must in all cases be supported by substantial evidence in the record.

Under the substantial evidence standard of review, we search for evidence, clearly set forth in the record below, to justify the conclusions that the Board has drawn. See Gartside, 203 F.3d at 1312. As we noted in Gartside, “[i]n appeals from the Board, we have before us a comprehensive [factual] record . . . including all of the relevant information upon which the Board relied in rendering its decision.” Id. at 1314. Crucially, we held that “[t]hat record, when before us, is closed, in that the Board’s decision must be justified within the four corners of that record.” Id.; see also Ass’n of Data Processing Serv. Orgs., Inc. v. Bd. of Governors of Fed. Reserve Sys., 745 F.2d 677, 683 (D.C. Cir. 1984) (“[W]hen cases are governed by the substantial evidence

standard of review] the factual support must be found in the closed record as opposed to elsewhere.”).

The fact that section 706 of the APA requires that the Board’s decision be reviewed on the record does not directly answer the question whether the Board’s decisions may be based on the Board’s substantive expertise reflected in the record. However, in a contested proceeding involving “resolution of conflicting private claims to a valuable privilege,” it is particularly important that the agency’s decision on issues of fact be limited to the written record made before the agency. See Sangamon Valley Television Corp. v. United States, 269 F.2d 221, 224 (D.C. Cir. 1959).<sup>2</sup> The Supreme Court rejected an agency’s attempt to rely on its own expertise in a contested proceeding in Baltimore & Ohio R.R. Co. v. Aberdeen & Rockfish R.R. Co., 393 U.S. 87, 91-92 (1968). The Interstate Commerce Commission (“ICC”), in a ratemaking proceeding involving competing claims by Northern and Southern railroads, determined that the costs of North-South traffic were fairly represented by territorial average costs. The Supreme Court held that the ICC’s decision was not supported by record evidence, and that in such a context agency expertise cannot substitute for record evidence because “[t]he requirement for administrative decisions based on substantial evidence and reasoned findings—which alone make effective judicial review possible—would become lost in the haze of so-called expertise.” Baltimore & Ohio R.R. Co., 393 U.S. at

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<sup>2</sup> That case held that letters that “did not go into the public record” fatally tainted the Federal Communication Commission’s proceedings because the proceeding involved “resolution of conflicting private claims to a valuable privilege and . . . basic fairness requires such a proceeding to be carried on in the open.” Sangamon Valley, 269 F.2d at 224.

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The detailed PTO regulations governing interferences and other contested proceedings also highlight the importance of the comprehensive record that is required in contested administrative proceedings before the Board. See 37 C.F.R. §§ 41.100-41.158 (regulations governing contested cases); 37 C.F.R. § 41.200(a) ("A patent interference is a contested case."); 37 C.F.R. §§ 41.200-41.208 (regulations specific to patent interferences). All motions must be accompanied with "appropriate evidence, such that, if unrebutted, it would justify the relief sought." 37 C.F.R. § 41.208. Detailed rules govern depositions and the taking of testimony, requiring objections to be served and entered on the record, and permitting parties to move to exclude evidence from the record. 37 C.F.R. § 41.155. Transcripts of such testimony serve as the "true record of the testimony given by the witnesses." 37 C.F.R. § 41.157(e)(6)(ii). Finally, the Federal Rules of Evidence apply to contested proceedings unless regulations specifically provide otherwise. 37 C.F.R. § 41.152. These detailed regulations governing contested cases highlight the Board's role in such cases as an impartial adjudicator of an adversarial dispute between two parties.

We therefore hold that, in the context of a contested case, it is impermissible for the Board to base its factual findings on its expertise, rather than on evidence in the record, although the Board's expertise appropriately plays a role in interpreting record

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<sup>3</sup> Quite a different standard applies when agencies interpret ambiguous statutes. See Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837 (1984). In most situations deference is due to agency positions on a legal question. But this is not a Chevron situation both because the issue is factual, not legal, and because we have held in any event that the Board does not earn Chevron deference on questions of substantive patent law. Merck & Co. v. Kessler, 80 F.3d 1543, 1549-50 (Fed. Cir. 1996).

evidence. We do not—and need not—decide here the extent to which the Board in ex parte proceedings is so limited.

II

We now turn to the facts of this case. The Board here adjudicated the questions of priority of invention and derivation. Priority of invention is awarded “to the first party to reduce an invention to practice unless the other party can show that it was the first to conceive of the invention and that it exercised reasonable diligence in later reducing that invention to practice.” Medichem, S.A. v. Rolabo, S.L., 437 F.3d 1157, 1169 (Fed. Cir. 2006); 35 U.S.C. § 102(g). Priority is a question of law which is determined based on underlying factual determinations. Price v. Symsek, 988 F.2d 1187, 1190 (Fed. Cir. 1993).

A party may also assert that the patentee did not invent the patented invention by showing derivation. Id. In an interference proceeding, the person challenging the Senior Party’s priority date bears the burden of proof on derivation and must make two showings. Id. First, he must “establish prior conception of the claimed subject matter.”<sup>4</sup> Id. Second, he must prove “communication of that conception to the patentee that is sufficient to enable [him] to construct and successfully operate the invention.” Int’l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1376 (Fed. Cir. 2004) (internal quotation marks omitted). This court reviews a finding of derivation as a question of fact. Gambro

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<sup>4</sup> Conception is defined as “formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice. Conception is complete when the idea is so clearly defined in the inventor’s mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation.” Stern v. Trustees of Columbia University in New York, 434 F.3d 1375, 1378 (Fed. Cir. 2006) (internal citations and quotation marks omitted).

Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1576 (Fed. Cir. 1997).

The Board decision here turns on the second issue—communication. On this issue Brand argues that the Board improperly substituted its own opinion for evidence of the knowledge of one of ordinary skill in the art. We agree. As the Board correctly noted, in this case, “Miller, as the proponent of derivation by Brand . . . bears the burden of proving that one skilled in the art would have been capable, without undue experimentation, of making a staylog for securely supporting a tapered flitch in the position depicted [in MX2001].” J.A. at 61. The Board rejected as unconvincing the only relevant testimony, Miller’s testimony that he explicitly told Brand how to practice the invention of the count. There was also no testimony from one skilled in the art that the drawings communicated an enabling invention to a skilled recipient of the drawings.

The Board’s conclusion that “one skilled in the art . . . would have recognized [the] suitability [of Miller’s bugle-headed screw dogs MX2002] for securely supporting a tapered flitch in the position depicted in [MX2001]” was not supported by any citation to the record. J.A. at 62. Similarly, the Board did not anchor in the record its conclusion that an artisan would have deduced from the drawing of a flitch in MX2001 standing alone a method of securely fastening a tapered flitch to a staylog, given that the drawing did not depict any dogs or holes in the flitch. The Board here did not just interpret the drawings in MX2001 and MX2002 from the standpoint of one skilled in the art. Those drawings simply depicted a flitch (without dogs) and a bugle-headed dog (without a flitch), and did not show the relationship between the two or the position of the flitch with respect to the veneer-cutting knife. Indeed, the Board’s own description of MX2001

notes specifically that these relationships were "not shown." J.A. at 60.<sup>5</sup>

Lacking an explanation in the record as to how the depicted flitch or dogs would be arranged to perform the claimed method, the Board substituted its own expertise for record evidence that Miller was obligated to provide. The Board's finding that an artisan would have known how to securely fasten a tapered flitch to a staylog using bugle-headed dogs does not represent a simple substitution of bugle-headed dogs for existing dogs, but detailed inferences as to the mounting process. The detailed nature of the findings that the Board found necessary to make demonstrates the inappropriateness of its approach.<sup>6</sup> Finally, the path that the Board determined that a skilled artisan would

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<sup>5</sup> The Board found that "[a]lthough not discussed in the exhibit, it is apparent that the flitch is supported by the dogs (not shown) with its uppermost surface region parallel to the staylog mounting surface (not shown) and thus parallel to the edge of the veneer-cutting knife (not shown). J.A. at 60 (emphases added).

<sup>6</sup> Among its multiple findings the Board found that:

we are persuaded that one skilled in the art, having been informed of Miller's proposed bugle-headed screw dogs, would have recognized their suitability for securely supporting a tapered flitch in the position depicted in that exhibit. Furthermore, the artisan further would have recognized that Miller's dogs would permit the dogging holes to take the form of round holes or longitudinal pockets, with round holes offering the advantage of requiring less time and effort to form. The ability of the bugle-headed screw dogs to tightly clamp the flitch would have been readily apparent, since the hydraulic transverse clamping action would be expected to drive the facing parts of the edges of each pair of dogs into the walls of the dogging holes, whether formed as round holes or as longitudinal pockets.  
(...)

Although an artisan would have recognized that increasing the transverse dimension of the dogging holes while maintaining the two-inch transverse spacing shown in the exhibit would come at the expense of part or perhaps all of the expected increase in yield the exhibit attributes to a "reduced staylog, shallower dogs, and closer spacing of dogs" (shown in blue in the original sketch), the artisan would have recognized that this modification would have little, if

follow has, so far as the record reflects, never been followed. The Board found that bugle-headed dogs were not depicted in either Miller's application or Miller's '232 patent as used to support a tapered flitch, and the Board found no evidence that bugle-headed dogs had been used for the purpose of supporting a tapered flitch.<sup>7</sup> Under such circumstances the Board's decision was not supported by substantial evidence in the record.

Accordingly, we reverse the Board's award of judgment to Miller, order that judgment be entered for Brand and remand to the Board for entry of judgment and appropriate orders.

#### CONCLUSION

For the foregoing reasons, the decision below is reversed and remanded.

#### REVERSED AND REMANDED

#### COSTS

No costs.

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any, effect on the expected increase in yield the exhibit attributes to "keeping wedge, deep dogging holes, and less severe milling of sides of flitch" (shown in yellow in the original sketch).

J.A. at 62-64.

<sup>7</sup> The Board stated: "We did not overlook fact [sic] that the record includes no allegation, let alone proof, that Miller's proposed bugle-headed dogs were used (either successfully or unsuccessfully) to support a tapered flitch or a nontapered flitch on a staylog prior to Brand's May 31, 1995, benefit date." J.A. at 79.